

Solapur University, Solapur.
Semester Pattern Syllabus
B.Com Part – I
Business Mathematics
(w. e. f. June 2010)

Semester – I	Periods
Unit 1: Determinant & Matrices : Definition of second & Third order Determinant, Cramer's rule, Properties of determinant. Simple examples. Definition of a Matrix, Special types of matrices, Equality of Matrices, Algebra of matrices, Applications of matrix to business, Transpose of matrix, Inverse of matrix (by adjoint method)	15
Unit 2: Linear Programming Problem (L.P.P.) : Formulation of L.P.P., Graphical method of solution, Commercial examples. Cases having no solution, Multiple solution, Unbounded solution.	15
Unit 3: Mathematics of Finance : Interest, Simple Interest, Present value, Maturity value. Compound interest, Case of continuous compound Interest, Simple examples. Annuity, Ordinary annuity, Present value of annuity, Sinking fund, Practical examples.	15
Unit 4: Progression : Definition of A.P. & G.P., To find T_n & S_n , Simple practical commercial problems.	15
Note : 1. Use of soundless calculators are allowed. 2. Graph papers are allowed to use. 3. More stress should be given on commercial applications	

Semester II

Unit 1: **15**

Function of Real Variable :

Constant, Variable, Interval, Function, Illustrative examples on value of a function.

Functions related to business & economics, Cost Function, Demand Function, Revenue function, Profit function, Break-even point.

Determination of form of a function using Newton's Interpolation formula for unequal interval.

Definitions of Even, Odd, Linear, Quadratic, Exponential, Logarithmic, Inverse, Explicit, Implicit, Parametric, Composite, Increasing & Decreasing functions. Graph of a function.

Limit of a function :

Theorems on limits (without proof), Simple examples on evaluation of limits – Direct type, Factorization, Simplification, Rationalization, Infinity type, a^x type.

Unit 2: **15**

Differentiation :

Definition, derivative using first Principle. Rules of Differentiation Standard functions. Derivative of composite, Parametric Inverse, Exponential, Logarithmic, Implicit functions, Simple Examples.

Unit 3: **15**

Second Order Derivative (involving one variable) :

Maxima & Minima. Commercial Applications of Derivative – Marginal Cost function, Average Cost function. Marginal Average Cost function. Minimum Average Cost. Marginal Revenue function, Maximum Revenue, Maximum Profit, Price Elasticity of Demand. Numerical examples.

Unit 4: **15**

Integration :

Definitions, Standard forms, Integration by substitution by parts, by use partial fractions.

Illustrative examples.

Definite integrals – Properties (without proof), Simple examples.

Applications of integration to business – Determination of Cost, Revenue, Profit, Demand function, Consumer Surplus, Producer Surplus, Rate of sales. Numerical examples.

Note :

1. Use of soundless calculators are allowed.
2. Graph papers are allowed to use.
3. For limit, derivative & integration trigonometric ratios (functions) should be omitted.
4. More stress should be given on commercial applications.



Solapur University, Solapur
Nature of Question Paper For Semester Pattern
• Faculty of Commerce (B.Com., M.Com.)

Model Question Paper
(w.e.f. June 2010)

Time: - 2 hrs.

Total Marks-50

- | | | |
|-------------|--|-----------|
| Q. 1 | Multiple choice questions
(four alternatives should be given) | 10 |
| | 1 ----- | |
| | (a) (b) (c) (d) | |
| | 2 | |
| | 3 | |
| | 4 | |
| | 5 | |
| | 6 | |
| | 7 | |
| | 8 | |
| | 9 | |
| | 10 | |
| Q. 2 | Answer the following
(Short note/Short problem/Short answer) | |
| | (A) | 05 |
| | (B) | 05 |
| Q. 3 | Answer the following
(Short note/Short answer/Short problem) | |
| | (A) | 05 |
| | (B) | 05 |
| Q. 4 | Answer any one (Long answer/Problem) | 10 |
| | i) | |
| | ii) | |
| Q. 5 | Answer any one (Long answer/Problem) | 10 |
| | i) | |
| | ii) | |

1. Structure of the courses :-

- A) Each paper of every subject for Arts, Social Sciences & Commerce Faculty shall be of 50 marks as resolved by the respective faculties and Academic Council.
- B) For Science Faculty subjects each paper shall be of 50 marks and practical for every subject shall be of 50 Marks as resolved in the faculty and Academic Council.
- C) For B. Pharmacy also the paper shall be of 50 marks for University examination. Internal marks will be given in the form of grades.
- D) For courses which were in semester pattern will have their original distribution already of marks for each paper.
- E) For the faculties of Education, Law, Engineering the course structure shall be as per the resolutions of the respective faculties and Academic Council.

2. Nature of question paper:

A) Nature of questions.

"20% Marks - objectives question" **(One mark each and multiple choice questions)**

"40% Marks - Short notes / Short answer type questions / Short Mathematical type questions/ Problems. **(2 to 5 Marks each)**

"40% Marks - Descriptive type questions / Long Mathematical type questions / Problems. **(6 to 10 Marks each)**

- B) Objective type question will be of multiple choice (MCQ) with four alternatives. This answer book will be collected in first 15 minutes for 10 marks and in first 30 minutes for 20 marks.

Each objective question will carry one mark **each**.

- C) Questions on any topic may be set in any type of question. All questions should be set in such a way that there should be permutation and combination of questions on all topics from the syllabus. As far as possible it should cover entire syllabus.
- D) There will be only five questions in the question paper. All questions will be compulsory. There will be internal option **(40%)** and not overall option. **for questions 2 to 5.**

3. Practical Examination for B. Sc. I. will be conducted at the end of second semester.

4. Examination fees for semester Examination will be decided in the Board of Examinations.

The structures of all courses in all Faculties were approved and placed before the Academic Council. After considered deliberations and discussion it was decided not to convene a meeting of the Academic Council for the same matter as there is no deviation from any decision taken by Faculties and Academic Council. Nature of Question Paper approved by Hon. Vice Chancellor on behalf of the Academic Council.